

REMARKS

1. Introduction

In the Office Action mailed May 15, 2003, the Examiner rejected claims 1-4 and 8 under 35 U.S.C. 103(a) as being unpatentable over Nasir et al., *Combinatorial Chemistry & High Throughput Screening* (“Nasir”) in view of Dixon et al., U.S. Patent No. 4,835,100 (“Dixon”) and further in view of Dhar et al., U.S. Pub. No. 2002/0110803 (“Dhar”). The Examiner rejected claims 5-7 under 35 U.S.C. 103(a) as being unpatentable over Nasir, in view of Dixon and further in view of Dhar and further in view of Michel et al., U.S. Patent No. 5,741,654 (“Michel”). The Examiner rejected claims 9-10 under 35 U.S.C. 103(a) as being unpatentable over Nasir, in view of Dixon and further in view of Dhar and further in view of McMahon et al., U.S. Patent No. 5,166,078 (“McMahon”). The Examiner rejected claims 11-18 as being unpatentable over Nasir, in view of Dhar and further in view of Dixon.

Applicants have currently amended claim 11.

For the reasons set forth below, Applicants respectfully request reconsideration and allowance of the claims, as amended.

2. Response to Rejections

Independent claims 1 and 11 recite a “tracer comprising an aflatoxin oxime conjugated to a fluorophore.” The Examiner acknowledges that none of the prior art of record teaches such a tracer. In particular, with respect to Nasir, Dixon, and Dhar:

- The Examiner cites Nasir as teaching using fluorescence polarization to analyze mycotoxins in grains but concedes that Nasir does not refer to aflatoxin specifically.

- The Examiner cites Dixon as teaching a method and test kit for detecting aflatoxin B1 using monoclonal antibodies but concedes that Dixon does not teach an aflatoxin oxime conjugated to a fluorophore.
- The Examiner cites Dhar as teaching an assay for aflatoxin B1 that uses an aflatoxin oxime conjugated to horseradish peroxidase but concedes that Dhar does not teach an aflatoxin oxime conjugated to a fluorophore.

Instead, the Examiner argues that it would have been obvious to one of ordinary skill in the art to substitute the horseradish peroxidase label in Dhar with a fluorophore. *[The flaw in the Examiner's argument is that the Examiner has not identified any prior art teaching, suggestion, or motivation to make this substitution. See MPEP § 2143.01 ("Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art."].* Accordingly, the Examiner has not established a *prima facie* case of obviousness.

[In fact, Dhar actually teaches away from Applicants' invention by teaching a heterogeneous assay. In particular, for the aflatoxin B1 assay of Example 1, Dhar teaches immobilizing the antibody to aflatoxin B1 in a membrane (Dhar, ¶¶ 67, 98). In contrast to this heterogeneous assay taught by Dhar, fluorescence polarization techniques are generally used in homogeneous assays. Indeed, claim 1 specifically recites a "homogeneous assay," and claim 11 is currently amended to recite "in a homogeneous assay." Because Dhar teaches away from Applicants' invention, Dhar cannot be combined with other references to support an obviousness]

rejection. *See* MPEP § 2145(X)(D)(2) ("It is improper to combine references where the references teach away from their combination.").

Even assuming a prior art suggestion to substitute the horseradish peroxidase label in Dhar with a fluorophore, the Examiner has not even attempted to address the special property of being able to bind to an antibody specific for aflatoxin, "to produce a detectable change in fluorescence polarization," as recited in claims 1 and 11. In order to establish a *prima facie* case of obviousness, there must be a prior art teaching of a reasonable expectation of success, and the prior art must teach or suggest all the claim limitations. *See* MPEP § 2143. However, the Examiner has not satisfied either of these elements. The Examiner has not identified any prior art teaching that an aflatoxin oxime conjugated to a fluorophore would still be able to bind to an antibody specific for aflatoxin. Nor has the Examiner identified any prior art teaching that any binding would produce a detectable change in fluorescence polarization. In fact, Nasir teaches that even if binding occurs little polarization shift may be observed, due to a phenomenon called the "propeller effect." *See* Nasir, p. 180. As a result, the Examiner has not established a *prima facie* case of obviousness.

Accordingly, Applicants submit that claims 1 and 11, as amended, are allowable over the prior art of record, including Nasir, Dixon, and Dhar. Applicants further submit that claims 2-10 and 12-18 are also allowable as depending from allowable claims.

3. Conclusion

Applicants submit that the present application is now in condition for allowance and notice to that effect is hereby requested. Should the Examiner feel that further dialog would advance the subject application to issuance, the Examiner is invited to telephone the undersigned at any time at (312) 913-0001.

Respectfully submitted,
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Berghoff

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